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REMARKS

Reconsideration and further examination is respectfully requested in view of the above amendments and below remarks. Claims 1-38 are currently pending in this application.

Objections to the Disclosure

The disclosure was objected to for failing to include the assigned serial numbers in the identified related art. Applicants have amended the specification to overcome this rejection, and therefore respectfully request that the objection be withdrawn.

Rejections under 35 U.S.C. § 103 (a)

Claims 1-38 were rejected under 35 U.S.C. §103(a) as being unpatentable over Busuioc et al (hereinafter Busuioc) (U.S. 2001/0033551 A1) in view of Levandovsky et al. (hereinafter Levandovsky) (2002/0063915 A1).

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Busuioc:

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Busuioc describes, in the abstract, "... a distributed control system ... of co-operating intelligent software agents which individually have control, or responsibility for managing, one or more nodes of the communications network..." (Abstract) The software agents of Busuioc are of two types: Customer Agents (CAs) and Service Management Agents (SMAs). "Each CA ... is associated with a SMA ... and acts to negotiate between a GMSN customer and a SMA that might provide service to that customer..." (Busuioc, paragraph 68).

At column 75 Busuioc states:

"... Conveniently, there may be one software agent, a SMA 5, situated at each of the GMSN nodes 3, each SMA 5 monitoring its underlying switch 3 as well as the links 2 extended to the switch 3. Primarily, each SMA 5 controls just one switch 3 but any given SMA 5 has the ability to control a number of switches 3 simultaneously. That is, a SMA 5 is able to specify which incoming and outgoing communication links 2 a service will use..."

Busuioc states, at paragraph 79:

"Acting in a dynamically changing environment, a SMA 5 may evolve through various states 30. A state 30 is defined as an instance of agent's knowledge, created as a result of the agent's interaction with the physical environment and/or contact with other agents..."

Accordingly, in Busuioc the communication network is controlled by the SMA in response to knowledge that the SMA collects from other *agents*, including Customer Agents.

With regard to user input, Busuioc states, at paragraph 0108:

"On receiving a customer request for a new service, the CA 6 matches it against the range of available services offered by the service provider and builds a service specification which is handed over to the SMA responsible for the source node for that particular service..."

Thus, client requests, entered at the user interface, are forwarded without authentication to the SMA.

Levandovsky:

Levandovsky describes a method for validating a path through a switched optical network, wherein a bit error rate for the path is determined. The path is validated or admitted into the network if the bit error rate is found to be within a predetermined range.

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With regard to the Busuioc and Levandovsky combination of references, the Examiner states, at pages 3-4 of the office action:

“... Although (Busuioc) ... teaches MSN being any network that is capable of supporting a range of services (page 1, para. [0014]), the reference fails to teach explicitly teach optical communication network comprises an automatically switched optical/transport (ASON), and wherein the UNI comprises an ASON UNI.

The reference Levandovsky teaches optical communication network comprises an automatically switched optical/transport network (ASON), and wherein the UNI comprises an ASON UNI. (Fig. 1, elements 110, 120, and 156, page 1, para. [0014]).

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention was made to implement Busuioc's service agents, for solving the problem that is being faced in the optics industry, as indicated by Levandovsky, the network is faced with the problem of delivering an acceptable level of performance for the connection, by configuring the Levandovsky's ASON with the readily available Busuioc's service agents...”

Examiner has failed to establish a prima facie case of obviousness

It is well established that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Examiner has failed to satisfy several of these criteria.

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No motivation for modification suggested by the Examiner

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicants do not agree that such a suggestion can be found in the references.

Applicants note that Levandovsky teaches a solution to this problem; one where “A cumulative optical signal to noise ratio (SNR) ... is determined while the path is being set up...The path’s route is modified if the SNR at the output of any element on the path is outside a predefined range...” (paragraph 0006).

The Examiner states that ‘by configuring the Levandovsky’s ASON with readily available Busuioc’s service agents’ the problem of delivering an acceptable level of performance to the connection is solved. Applicant’s disagree, and note that it is not the existence of the *agents* that permit the level of performance to be achieved, but rather the tests performed by Levandovsky. Applicants can see no advantage that would be gained by Levandovsky in the ‘delivery of acceptable level of performance’, merely by the inclusion of agents in the hardware. Accordingly, the motivation provided by the Examiner is insufficient, and thus the rejection is improper and should be withdrawn.

Combination neither describes nor suggests the claimed inventionClaims 1-11:

However, even assuming that an argument could be made for the suggested modification, Applicants note that the combination of references fails to describe or suggest all of the elements

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of the claims. For example, claim 1, as amended, now recites "...An optical service agent for managing a service level agreement (SLA) for a user in an optical communication network comprising a plurality of optical devices the optical service agent comprising ... a user-to-network interface (UNI) for interfacing the user with an optical communication network ... authentication logic for controlling access by the user to the UNI ... a peer-to-peer interface for interfacing with peer users; and optical service logic, coupled to the UNI and the peer-to-peer interface, for managing the optical communications network in accordance with said SLA for the user..."

Applicants note that Busuioc describes two agents; a CA agent and an SMA agent. The CA agent includes a 'user interface', but appears, as shown in Figure 1, to couple only to an SMA agent. Busuioc states, at page 3, paragraph [0068] "Each CA 6 is associated with a SMA 5 and acts to negotiate between a GMSN customer and a SMA that might provide a service to that customer..." No mention or suggestion is made of any communication between CAs, and in fact Figure 1 expressly illustrates that communication exists only between a CA and an SMA.

While the CA of Busuioc includes no peer-to-peer interface, the SMA of Busuioc does not include a user interface. Rather, the SMA "may evolve through various states 30 ... created as a result of the agent's interaction with the physical environment and/or contact with other agents..." No mention is made, in Busuioc, Levandovsky, or the combination thereof, of an agent having *both* a UNI and a peer-to-peer interface, as recited in the claims. For at least the reason that the references fail to teach or describe this limitation, the rejection is overcome and should be withdrawn.

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In addition to failing to describe or suggest an optical agent including a UNI and a peer-to-peer interface, Applicants could find no mention or suggestion of the limitation of "...authentication logic for controlling access by the user to the UNI..." As noted at page 18 of Applicants' specification, such logic may be used "In order to guarantee service to its users and maintain integrity of the optical core..." No such safeguard is found in either Busuioc, Levandovsky or the combination thereof. For this additional reason it is respectfully requested that the rejection under 35 U.S.C. §103 be withdrawn.

Dependent claims 2-11 serve to add further patentable limitations to claim 1, and are allowable for at least the reasons put forth above with regard to claim 1.

Claims 12-34:

Claim 12 recites "...A *device* comprising ... a *user application* requiring a communication service from an optical communication network, the communication service having an associated service level agreement (SLA) ... *authentication logic* for controlling access by the user application to the communication services of the optical communication network; and an *optical service agent for managing the optical communication network* to provide the service at the associated service level agreement (SLA) to the user application..."

Applicants note that claim 12 has been amended to more clearly recite that the optical service agent is 'for managing the optical communication network to provide' the desired SLA. With regard to claim 12, the Examiner states at page 12 of the office action "Thereby the reference teaches "An service agent (CAs) for managing a service level agreement (SLA) for the user application, and a user application requiring communication from communication network (Fig. 1, elements 6)..." Applicants note that the CA does *not* 'manage the optical communication

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network to provide the service at the associated service level agreement.' Rather, in Busuioc, the SMA 'is able to specify which incoming and outgoing communication links 2 a service will use...'

In addition, as noted above with regard to claim 1, neither Busuioc, Levandovsky or the combination thereof describe or suggest "...authentication logic for controlling access by the user application to the communication services of the optical communication network..." For at least the reason that the combination of references fail to describe several of the limitations of the claims, it is respectfully requested that the rejection be withdrawn.

Dependent claims 13-34 depend upon claim 12, add further patentable limitations to claim 12 and are allowable for at least the reasons put forth with regard to claim 12. Thus it is requested that the rejection of these claims also be withdrawn.

Claims 35 – 38:

Independent claim 35 recites "...A method for managing service level agreements in an optical communication system, the method comprising at least one of ... authenticating a request for communication services, the request including a service level agreement (SLA) ... monitoring and analyzing the connection in real-time for determining SLA compliance ... gathering and maintaining statistical information relating to a connection ... analyzing the statistical information off-line for determining SLA compliance, patterns, and trends ... interacting with a service provider to enforce penalty provisions in the SLA ... interacting with a service provider to negotiate a credit for services not provided by the service provider in accordance with the SLA ... interacting with a service provider to negotiate "replacement" services for a breach of the SLA ... interacting with various network elements to rectify a breach

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of the SLA ... interacting with the service provider to dynamically modify the SLA based upon changing user requirements; and ... interfacing with a billing/accounting system to provide SLA-related information...”

As mentioned above with regard to claims 1 and 12, no mention is found in Busuioc or Levandovsky of the step of “authenticating a request for communication services, the request including a service level agreement (SLA) ...” For at least this reason, claim 35 and its dependent claims 36-38 are patentable over the combination of Busuioc and Levandovsky, and it is requested that the rejection be withdrawn.

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Conclusion:

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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Date


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